Paul Hastings

Paul, Hastings, Janofsky & Walker LLP
55 Second Street
Twenty-Fourth Floor
San Francisco, CA 94105
telephone 415-856-7000 • facsimile 415-856-7100 • www.paulhastings.com

Atlanta
Beijing
Brussels
Chicago
Frankfurt
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London
Los Angeles
Milan
New York
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Palo Alto
Paris
San Diego
San Francisco
Shanghai
Tokyo
Washington, DC

(415) 856-7010
peterweiner@paulhastings.com

April 14, 2009

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VIA ELECTRONIC MAIL AND OVERNIGHT MAIL

Ms. Cassandra Owens, Chief
Industrial Permitting Unit
Los Angeles Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, CA 90013
cowens@waterboards.ca.gov

Re: Comments on April 6, 2009 Tentative Order No. R4-2009-00XX (Waste Discharge Requirements), Tentative Fact Sheet, and Tentative Cease and Desist Order

Dear Ms. Owens:

On behalf of the Boeing Company ("Boeing"), I am pleased to submit the following comments on Tentative Order No. R4-2009-00XX, NPDES No. CA0001309 ("Tentative WDR"), the Tentative Cease and Desist Order ("Tentative CDO"), and the Tentative Fact Sheet issued for the Santa Susana Field Laboratory ("Santa Susana"), issued by Regional Board Staff on April 6, 2009.[1] These documents replaced the initial tentative documents issued by the Board on March 11, 2009.

Boeing and the Regional Board continue to share a common goal of protecting the beneficial uses of the waters of the State. Boeing remains committed to achieving full compliance with its NPDES permit requirements and to providing the necessary resources to achieve that goal. Since 2004, Boeing has invested over $30 million to improve the quality of the discharges from Santa Susana, upgrade its network of on-site Best Management Practices (BMPs), and comply with the numeric limits in its permit.

We appreciate the efforts of Board Staff in evaluating Boeing's December 10, 2008 Report of Waste Discharge ("ROWD") and preparing the Revised Tentative WDR, Tentative CDO, and Tentative Fact Sheet. Nonetheless, we are concerned that the proposed documents do not adequately account for the complexity of conditions and compliance

[1] The Tentative Fact Sheet is incorporated by reference into the Tentative WDR. See Tentative Fact Sheet at 4.

efforts at Santa Susana. We respectfully request that these tentative documents be modified in accordance with our comments as set forth below.

I. The benchmarks for Outfalls 008 and 009 can and should be extended to June 26, 2012.

In its March 16, 2009 Tentative WDR, CDO, and Fact Sheet, the Regional Board proposed extending the benchmarks for Outfalls 008 and 009 for three years to June 26, 2012. As the Regional Board expressly recognized, this extension was necessary to allow sufficient time to perform an Interim Source Removal Action ("ISRA") in the watershed areas for Outfalls 008 and 009 as directed by the Regional Board's Order of December 3, 2008, issued pursuant to its authority under Water Code Section 13304 ("13304 Order"). The Order directs Boeing to undertake source removal of soils to address the presence of contaminants that have resulted in exceedances of the effluent limitations established for Outfalls 008 and 009. Boeing submitted a Preliminary ISRA Work Plan on February 13, 2009 and will submit a final ISRA Work Plan on or before May 1, 2009. As described in the Preliminary Work Plan, it will take several years to plan for and implement the source removal measures and complete restoration activities. Boeing cannot and should not be expected to comply with stringent numeric limitations during that period.

Despite these facts, and despite the Board's continued recognition that a three-year timeframe for the ISRA is "as short as practicable," see Tentative WDR at 38 (¶ 97); Tentative Fact Sheet at 48; see also CDO at 6 (¶ 27), the Regional Board now proposes to extend the benchmarks for Outfalls 008 and 009 only until May 17, 2010, after which the benchmarks would become enforceable numeric limits. See Tentative WDR at 38 (¶ 97); Tentative Fact Sheet at 50 (Item IX.B). According to the Tentative WDR, "[n]otwithstanding the need for a longer compliance schedule [due to the ISRA], the [State Implementation Plan ("SIP")] limits compliance schedules in NPDES permits for priority pollutants to not later than May 17, 2010. Therefore, this Order includes a schedule that terminates on May 17, 2010." Tentative WDR at 38 (¶ 97).

The Board's conclusion is incorrect. The benchmarks for Outfalls 008 and 009 can extend to 2012 because they are final, enforceable effluent limitations based on the SIP and California Toxics Rule ("CTR"); they are not compliance schedules that impose less stringent standards. An exceedance of a benchmark is immediately enforceable by the required implementation of improved BMPs and, if a permittee does not take positive

action, the Regional Board may determine that it is in violation of its permit.[2] Indeed, controlling case law explains that numeric effluent limitations are not necessarily required for storm water discharges and that benchmarks with BMPs "are in fact [water quality based effluent limits] which a permitting authority may employ when it has found that storm water discharges may cause a receiving body to exceed water quality standards." Divers' Envtl. Conservation Org. v. State Water Resources Control Bd., 145 C.A. 4th 246, 258 (2006); see also id. at 262 ("In sum the Regional Board was empowered to enforce the CTR by way of the BMP's and benchmarks set forth in the permit.").

Extending the benchmarks for Outfalls 008 and 009 for three years therefore is permissible and makes good sense. The Board can and should extend the benchmarks for Outfalls 008 and 009 until June 26, 2012, as the Board originally proposed.

II. The relationship between the ISRA and the ENTs must be clarified.

It is unclear from the Tentative WDR, CDO, and Fact Sheet whether the Regional Board expects Boeing to design and implement the Engineered Natural Treatment system ("ENTs") based on the results of the ISRA, or whether it expects Boeing to implement the ENTs contemporaneously with the ISRA. Compare Tentative CDO at 7 (¶ 41) ("Interim source removal coupled with the implementation of the ENTs at Outfalls 008 and 009 enhances the Discharger's ability to achieve full compliance with the NPDES permit.") (emphasis added) with Tentative CDO at 9 (¶ 4) (requiring Boeing to "[s]ubmit a report on the results of the ISRA "and" ENTs implementation based on data "collected after completion of the ISRA and/or implementation of ENTs") (emphasis added); see also Tentative CDO at 6 (¶ 27), 8 (¶ 42), 9 (¶4); Tentative Fact Sheet at 48.

Only the former makes sense. As the Board has explained, the ISRA is designed to reduce the level of constituents being discharged from Outfalls 008 and 009 and allow those discharges to achieve compliance with water quality standards. See 13304 Order; Tentative CDO at 6. The ISRA will take three years to implement, and it is only after this period that Boeing and the Regional Board will be able to determine the ISRA's effectiveness and design any subsequent ENTs accordingly. The Board therefore should clarify that Boeing will not be expected to implement the ENTs during the time that it is

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[2] It makes no difference whether the Regional Board's stated rationale for requiring improved BMPs in the event of a benchmark exceedance is to protect water quality or to penalize a violation of the benchmark; in either case the benchmark is enforceable, just like a numeric limitation.

implementing the ISRA, and that the ENTs will be designed in light of the ISRA's results.[3]

In addition, the Tentative CDO implicitly contemplates some continuing work by the Expert Panel established pursuant to the 2007 CDO.[4] See Tentative CDO at 7 (¶ 40); see also Cease and Desist Order No. R4-2007-0056 at 8 (¶ 43), 10 (¶ 3.b) (Nov. 1, 2007). We assume that part of that work will be consideration of the timing and design of any ENTs as a result of the ISRA, as well as continuing the work that the Regional Board assigned the Panel in the 2007 CDO. We would appreciate confirmation of our understanding in the final permit.

III. The Reasonable Potential Analysis should account for constituents that have never been detected or detected below applicable limits.

The Tentative WDR states at pages 2 and 39 (¶¶ 6, 98) that it is based on Boeing's December 2008 ROWD, the Regional Board's 13304 Order, and a new Reasonable Potential Analysis ("RPA") "conducted on data collected from August 2004 through December 2008." See also Tentative Fact Sheet at 4. The Tentative WDR explains that "[t]he new RPA did not yield new constituents with reasonable potential at any time of the current compliance locations." See Tentative WDR at 39 (¶ 99).

Boeing concurs that the data do not reveal new constituents with reasonable potential. However, Boeing submitted extensive information in the ROWD demonstrating that many constituents for which Boeing is required to conduct a RPA have never been detected (see Form 200, Section IV, Table 4) or, if they have been detected, have been detected below applicable limits (see Form 200, Section IV, Table 5). Neither the Tentative WDR nor the Tentative Fact Sheet addresses this information or explains why,

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[3] In 2008 and thus far in 2009, Boeing already has spent $5 million and significant time on ENTs design, permitting and field work, including geotechnical investigation, culvert maintenance, and implementation of Expert Panel-directed BMPs at Outfall 008. See Attachment A (chronology of ENTs-related activities and accomplishments). Designing and implementing the ENTs to account for the ISRA's results will not cause significant delay given Boeing's already substantial investment of resources in developing the ENTs.

[4] We note that the Tentative Fact Sheet states that "[t]he Discharger [Boeing] assembled" the Expert Panel. See Tentative Fact Sheet at 46. This statement is incomplete and should be revised to indicate that Boeing assembled the Expert Panel with input and review from Regional Board staff and relevant environmental organizations.

despite that information, these constituents still warrant stringent effluent and monitoring requirements. If a RPA is conducted for the purpose of potentially including new constituents for monitoring, then the RPA also should provide a basis for removing from the monitoring regime constituents that have been shown to present no risk to water quality objectives. See December 2008 ROWD (listing constituents that have never been detected or detected below applicable limits).

Finally, Boeing continues to believe that it is inappropriate to conduct a RPA for discharges, such as those at Santa Susana, that are storm water-only discharges. Boeing also maintains that the Regional Board, not Boeing, should perform the analysis to the extent it is required. See ROWD at Form 200, Section IV, pp. 12-13 (Tables 4 and 5).

IV. The WDR should include a site-specific design storm.

In its December 2008 ROWD, Boeing requested that the Regional Board establish a site-specific design storm for Santa Susana consistent with the Expert Panel's recommendation. In the Tentative WDR and Fact Sheet, the Regional Board has declined this request on the basis that it would be "premature" to establish a regional or site-specific design storm before additional technical work is performed, and before "a full consideration of the policy considerations of adopting a regional design storm policy." See Tentative Fact Sheet at pp. 46-47. The Board also has explained that it "believes it is not appropriate to incorporate the design storm into the permit at this time" in light of ongoing uncertainties. Id.

Boeing respectfully disagrees. The Regional Board required the formation of the Expert Panel "to review site conditions, modeled flow, contaminants of concern, and evaluate the BMPs capable of providing the required treatment to meet the effluent limits." See Cease and Desist Order No. R4-2007-0056 at 10 (¶ 3.b) (Nov. 1, 2007); see also Fact Sheet for Order No. R4-2007-0055 (Oct. 15, 2007) at 46; Order No. R4-2007-0055 (Nov. 1, 2007) at 55, 58. In furtherance of this mandate, and as the Board recognizes, see Tentative WDR at 38 (¶ 96), the Expert Panel prepared its report, "Expert Panel Final Consensus Recommendation on a Site Specific Design Storm for Santa Susana," and recommended a design storm of 2.5 inches during a 24-hour period or 0.6 inches in an hour. This analysis relied on continuous hydrologic simulation and a separate corroborating model.[5]

[5] The Design Storm Task Force has published its final report on the regional design storm for the Los Angeles Region. Among other things, the report recommends a design storm for use in the Los Angeles Region for TMDL implementation planning purposes. See

In light of the extensive information provided to the Regional Board on the proposed site-specific design storm, the WDR should reflect this recommendation. Boeing recognizes that the Tentative WDR includes a reopener clause to reconsider a site-specific design storm in the future. Tentative WDR at 57 (¶ D). Although Boeing supports the inclusion of this clause in the final permit and looks forward to the opportunity to bringing this important issue before the Board, Boeing believes that the time is ripe to adopt a site-specific design storm now.

V. The Regional Board should allow the use of composite sampling.

Boeing requested in its ROWD that the Regional Board allow storm water samples to be collected using composite sampling, rather than grab sampling, for constituents where such sampling is allowed pursuant to 40 C.F.R. § 122.21(g)(7). This request was based on the recommendation of the Expert Panel in its April 30, 2008 letter to the Regional Board. The Expert Panel provided additional support for this position in its October 20, 2008 memorandum, "Sample Collection Methods for Runoff Characterization at Santa Susana Field Laboratory." The Regional Board, however, has denied this request on the basis that "the data collected previously [at Santa Susana] indicates that there is no difference between grab and composite samples." Tentative Fact Sheet at p. 47.

The data set on which the Regional Board relied in reaching this conclusion is extremely small and is contradicted by the large body of information collected by the Expert Panel. This information clearly shows that composite sampling is more representative than grab samples of constituents in storm water discharges. More accurate samples will yield more reliable information, which will in turn be more useful in advancing water quality objectives. We urge the Board to reconsider its decision.

VI. The compliance monitoring points at Outfalls 012, 013, and 014 should be removed from the WDR.

As the Regional Board is aware, Outfalls 012-014 were established to monitor wastewater discharges associated with rocket engine testing at those locations. In its comments on Tentative WDR R4-2007-00XX (finalized as Order No. R4-2007-0055 (Nov. 1, 2007)), Boeing requested permission to remove the compliance points at Outfalls 012-014 after

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Drew Ackerman, et al., Southern California Coastal Water Research Project, *Concept Development: Design Storm for Water Quality in the Los Angeles Region* (Technical Report 520, Oct. 2007), available at ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/520_designStorm.pdf.

such testing was terminated. The Regional Board denied this request on the basis that sampling results after the testing was completed would provide useful information, and retained the outfalls as monitoring points, with the numeric limits serving as benchmarks.

In its December 2008 ROWD, Boeing requested that the Regional Board eliminate the monitoring points at Outfalls 012-014 once the structures associated with the former engine testing operations are removed. In declining to make these requested changes in the Tentative WDR, the Regional Board has explained that "[s]ampling after the structures are removed will provide information regarding the potential transport of residual contamination by storm water runoff." Tentative Fact Sheet at 46.

The Regional Board should reconsider Boeing's request to eliminate the monitoring points at Outfalls 012-014 after structures of concern are removed. Removal of Outfalls 012-014 also is warranted because, as we previously noted in our comments on Order No. R4-2007-0055, storm water from Outfalls 012-014 flows to Outfalls 011 and 018, which remain subject to numeric effluent limitations under the Tentative WDR. There are no discharges other than storm water between these outfalls, and the additional monitoring at Outfalls 012-014 is duplicative.

Boeing submits that a sufficient amount of useful data to be provided by continued sampling at the Outfalls 012, 013 and 014 monitoring points will have been collected after two additional seasons of sampling after structure removal. Accordingly, the final WDR should provide that the monitoring points at Outfalls 012, 013 and 014 will be eliminated once that additional post-sampling monitoring has been completed.

VII. Effluent limits must be reasonable.

As noted above, Boeing is committed to improving water quality in the Los Angeles Region and to supporting strong, sensible water quality standards to further that goal. Boeing has devoted substantial resources to gathering and analyzing relevant information and to working with the Regional Board to establish suitable discharge limits and compliance methods for Santa Susana. As noted, since 2004, Boeing has invested over $30 million to achieving full compliance with its NPDES permit requirements.

Above all, water quality standards and discharge limits must be reasonable. This reasonableness standard is enshrined in the California Porter-Cologne Water Quality Control Act. See Cal. Water Code § 13000 ("The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state shall be

regulated to attain the highest water quality which is reasonable...."); id. § 13241 ("Each regional board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses.").

On November 10, 2008, Boeing submitted comments to the Regional Board in connection with the Triennial Review of the Water Quality Control Plan for the Los Angeles Region ("Basin Plan"), which are attached to these comments as Attachment B and incorporated by reference. (The attachments to Boeing's November 10, 2008 comments are on file with the Regional Board.) Among other things, these comments addressed the reasonableness of water quality standards and effluent limits, especially for storm water discharges. Factors to consider in establishing water quality standards and effluent limits include, but are not limited to, natural background conditions, the feasibility of achieving water quality conditions, the special challenges associated with compliance for storm water discharges, and economic considerations. These and other factors should be applied to the establishment of the numeric limits in the WDR.

VIII. Neither the Fact Sheet nor the WDR should attribute contamination at Santa Susana to past activities.

In a paragraph that was not included in prior Fact Sheets for Santa Susana, the Tentative Fact Sheet states that "Discharges from [Santa Susana] historically[] have exceeded effluent limitations in the NPDES permit constituents that are present at elevated concentrations onsite. These constituents with elevated concentrations are present as a result of past operations. The permit exceedances have resulted in a number of enforcement actions." Fact Sheet at 13 (emphasis added).

Boeing is not aware of any new evidence that substantiates the conclusion that regulated constituents with elevated concentrations in stormwater discharges from Santa Susana "are present as a result of past operations." To the contrary, extensive evidence, data, and analysis have been submitted to the Regional Board indicating that elevated levels of many regulated constituents (and, in turn, the exceedances of Boeing's NPDES permit) are attributable to conditions outside of Boeing's control. Nonetheless, in compliance with the Regional Board's 13304 Order, Boeing will be undertaking the ISRA to remove constituents of concern from the Outfalls 008 and 009 watershed. Pending the results of monitoring data collected following the implementation of the ISRA, further study may be required to determine the source(s) of these constituents. For these reasons, the sentence

referenced above which attributes the presence of constituents with elevated concentrations to past operations should be deleted from the Fact Sheet.

Sincerely,

Peter H. Weiner
of PAUL, HASTINGS, JANOFSKY & WALKER LLP

Attachment A: ENTs-Related Activities and Accomplishments (Apr. 13, 2009)
Attachment B: Boeing Comments on Basin Plan Triennial Review (Nov. 10, 2008)

cc: Thomas D. Gallacher, Director, Santa Susana, Environment, Health & Safety
Paul J. Costa, Manager, Santa Susana, Environment, Health & Safety
Lori N. Blair, Environmental Engineer/Scientist, Santa Susana, Environment, Health & Safety
Kathleen H. Wong, Counsel, Office of the General Counsel, Boeing

Attachment A

Geosyntec
consultants

Memorandum

Date: April 14, 2009

To: Lori Blair, Dave Dassler, and Paul Costa, The Boeing Company

Cc: Bronwyn Kelly, MWH

From: Eric Strecker & Brandon Steets, Geosyntec Consultants

Subject: Chronology of ENTS-Related Activities and Accomplishments

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This chronology of ENTS-related activities and accomplishments is being provided to you at your request to summarize past and ongoing efforts by the Expert Panel and others related to the ENTS project.

Month	ENTS-Related Activities and Accomplishments
November **2007**	Cease and Desist Order adopted by RWQCB (November 1)
December	ENTS & Expert Panel NPDES Work Plan submitted to RWQCB Developed list of 20 potential experts, obtained interest letters/e-mails, resumes/CVs Reviewed potential panel members with Regional Board staff, Heal-the-Bay, and Santa Monica Baykeeper, and Expert Panel members selected
January **2008**	Expert Panel kickoff meeting at SSFL (January 17) **Expert Panel public information meeting #1 (January 22)** Began special stormwater monitoring study (sampling during 3 Jan/Feb storms) to provide treatability information for ENTS selection and design
February	Conducted four virtual presentations with Expert Panel via webex conference call and one site visit (February 21), as well as Panel's extensive review of water quality monitoring data and watershed/ENTS modeling results, permitting information, and other background reports/documents
March	**Expert Panel (Dr. Stenstrom only) update presentation to RWQCB at March 6 hearing** Five new rain gauges installed in/near watersheds 008 and 009 per Panel request **Expert Panel public information meeting #2 (March 17)**
April	**Expert Panel (Dr. Stenstrom only) update presentation to RWQCB at April 3 hearing** **Expert Panel (Dr. Gearheart only) public tour of ENTS sites (April 4)** **Expert Panel public information meeting #3 (April 17)** Geotechnical investigation, focus on NASA ENTS locations Expert Panel design storm recommendations white paper submitted to RWQCB staff

	(April 30)
May	Boeing began installation of straw waddles along bare hillside upstream of Outfall 008 at request of Expert Panel, area hydromulched in September Biological surveys at proposed ENTS locations (for CEQA analysis purposes) begun
June	**Expert Panel presentation to RWQCB on ENTS at June 5 hearing** Aerial survey of ENTS areas in 008 and 009 watersheds to support design ENTS Conceptual Design Plans (including NASA ENTS) completed after extensive review by Expert Panel Expert Panel meeting with RWQCB staff to discuss recommended design storm (June 25)
July	Expert Panel ENTS alternatives analysis submitted to NASA (July 3) Asphalt removal by Boeing demo team at several of Panel's recommended locations (occurred from July – September) Archaeological surveys at proposed ENTS locations (for CEQA analysis purposes) conducted **Expert Panel public information meeting #4 (July 17)**
August	Follow-up geotechnical investigation at Outfall 008 ENTS location Site walk on Sage Ranch to discuss proposed off-site ENTS work with park ranger Expert Panel conference call to review ENTS alternatives analysis with NASA and NASA's consultant (August 29) Soil sampling begun to fill data gaps for estimating impacted soil quantities within ENTS
September	Boeing review of final draft Ventura County Special Use Permit (SUP) minor modification application for ENTS project (including NASA ENTS), including CEQA technical reports Begin (in parallel) County SUP application for ENTS project excluding NASA ENTS Received approval from Santa Monica Mountains Conservancy to conduct off-site ENTS work (September 22)
October	Expert Panel July public meeting summary letter submitted to RWQCB staff (October 6) Develop ENTS impacted soil excavation drawings Expert Panel Sampling methods white paper submitted to RWQCB staff (October 20) Ministerial grading permit application submitted to Ventura County for Culvert Maintenance construction (October 16) SSFL seed collection effort to allow for off-site plant propagation (October 21) Construction begun on Culvert Maintenance projects (October 21) Meet Ventura County grading permit staff to discuss ENTS permit requirements (October 23) Final ENTS (including NASA ENTS) CEQA technical reports completed (for County SUP application)
November	Design storm rationale technical memorandum and modeling data submitted to RWQCB staff (November 3) Plant propagation began at off-site nursery for ENTS project using seeds/cuttings collected from SSFL (>5000 plants) NASA decision to not allow ENTS on their property (note: decision required significant rework for County SUP application and CEQA technical reports) Revised ENTS Conceptual Design Plans (excluding NASA) completed

	Pre-construction biological surveys at ENTS locations begun
December	Soil Management Plan submitted to DTSC and RWQCB (December 1) Expert Panel site visit and tour of Culvert Maintenance projects (December 3) **Expert Panel public information meeting #5 (December 4)** Final (excluding NASA) SUP minor modification application submitted to Ventura County for ENTS project, including following CEQA technical reports: • Water Quality • Hydrology • Geotechnical (including results from earlier geotechnical investigations) • Biological Resources (including results from earlier biological survey) • Archaeology (including results from earlier archaeological survey) • Air Quality • Traffic • Climate Change • Noise • Construction Plan (including Soil Management Plan) ENTS Bioretention Filter Media Testing Study initiated (bench-scale testing began at Penn State-Harrisburg)
January **2009**	Boeing met with RWQCB staff to review Soil Management Plan (January 14)
February	County completed 1st round of review on ENTS SUP application Boeing submitted responses to RWQCB comments on Soil Management Plan (February 18)
March	Boeing submitted response to County comments on ENTS SUP application Stormdrain videoed to provide data for final ENTS design (March 12) Tentative draft NPDES permit and CDO issued by RWQCB (March 16) Draft ENTS final design drawings and hydrology/hydraulics calculations report submitted to Expert Panel for review
April (planned)	Submit responses to Expert Panel comments on draft ENTS final design package Complete construction on all 11 Culvert Maintenance projects Submit revised draft ENTS final design drawings and hydrology/hydraulics calculations report to Boeing for final review Submit CEQA Initial Study to Ventura County Submit requests for bid for off-site nursery to grow >19,000 additional plants for eventual transplant to ENTS sites
May (planned)	NPDES reopener RWQCB hearing on May 7 Develop ENTS Revegetation Plan Submit following permit applications to allow for ENTS construction: • County grading permit • County oak tree encroachment permit • CDFG Streambed Alteration Agreement • ACE nationwide permit • RWQCB 401 certification

Note: Expert Panel public information updates on past/completed, current/ongoing, and future/planned activities are indicated in **bold**.

Attachment B

Paul Hastings

Paul, Hastings, Janofsky & Walker LLP
55 Second Street • Twenty-Fourth Floor • San Francisco, CA 94105-3441
telephone 415 856 7000 • facsimile 415 856 7100 • www.paulhastings.com

Atlanta
Beijing
Brussels
Chicago
Frankfurt
Hong Kong
London
Los Angeles
Milan
New York
Orange County
Palo Alto
Paris
San Diego
San Francisco
Shanghai
Tokyo
Washington, DC

(415) 856-7076
zacharywalton@paulhastings.com

November 10, 2008

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VIA HAND DELIVERY AND E-MAIL

Ms. Tracy Egoscue
Executive Officer
California Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200 - 1st Floor
Los Angeles, CA 90013
(213) 576-6605
tegoscue@waterboards.ca.gov

Re: Comments on Basin Plan Triennial Review

Dear Ms. Egoscue:

On behalf of The Boeing Company ("Boeing"), this letter provides comments and information relevant to the Los Angeles Regional Water Quality Control Board's ("Regional Board") Triennial Review of the Water Quality Control Plan for the Los Angeles Region ("Basin Plan"). This letter is submitted in response to the Regional Board's September 25, 2008 "Request for Data and Information on Water Quality Standards and Other Basin Planning Issues for the Los Angeles Region."

Boeing is committed to improving water quality in the Los Angeles Region and to supporting strong, sensible water quality standards that effectuate that goal. As part of this commitment, Boeing has devoted substantial resources to gathering and analyzing relevant information, and to working with the Regional Board to establish suitable discharge limits and compliance methods for the Santa Susana Field Laboratory ("SSFL"). Much of this information already has been shared with the Regional Board. Boeing is submitting this information again so that it is included in the administrative record for the Regional Board's 2008 Triennial Review. This information is marked by Attachment numbers and included in electronic format on the enclosed CDs.

The Triennial Review process provides the Regional Board, the regulated community, and the public a unique opportunity to thoughtfully consider the best way to improve and maintain water quality in the Los Angeles region. Boeing is pleased to be part of this process.

I. Establishing reasonable water quality standards

A. The requirement to establish reasonable standards

To be effective in improving and maintaining the Los Angeles Region's water quality, the Basin Plan must include water quality objectives and standards that are founded on a solid scientific and technical basis and are, above all, reasonable. This fundamental "reasonableness" concept is enshrined in the California Porter-Cologne Water Quality Control Act. See Cal. Water Code § 13000 ("The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable...."); id. § 13241 ("Each regional board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses.").

Section 13241 also outlines factors to be considered in developing reasonable and scientifically sound water quality standards. Pursuant to these factors, water quality standards should, among other things, account for natural background conditions; specify the water quality conditions that can reasonably be achieved through the coordinated control of all factors; consider economic, housing, and social factors; and establish clear priorities for implementing water quality management measures. We trust that the Regional Board will take these factors into account during the 2008 Triennial Review.

B. Information relevant to establishing reasonable standards

As the Regional Board is aware, Boeing has substantial experience and data that are relevant to the requirements discussed above. Boeing has submitted much of this information in the context of SSFL's NPDES permitting proceedings. Boeing is submitting the following information to the Regional Board now so that it will be part of the administrative record for the 2008 Triennial Review.

- Potential Background Constituent Levels in Storm Water at Boeing's Santa Susana Field Laboratory (June 2007) (Attachment 1)

  This report and its appendices were prepared by Flow Science Incorporated and submitted to the Regional Board in draft form on February 23, 2006 and in final form on July 23, 2007. The report evaluates the impacts of atmospheric deposition, erosion of native soils, and forest fires on storm water concentrations of metals and dioxin. In particular, the report compares concentrations of metals, dioxin, and other regulated constituents in storm water runoff from SSFL to concentrations of those constituents in storm water flows and in receiving waters throughout the Los Angeles region.

Among other things, the report concludes that:

- A substantial portion of the metals concentrations and loads in storm water from SSFL may derive from atmospheric deposition unrelated to site activities. The mass loading of these constituents deposited on land via dry deposition is large, and studies have shown that significant fractions of this mass can be transmitted to receiving waters during storm events. Two studies performed by Sabin et al. (2004 and 2005) are particularly relevant. Sabin et al. (2004) demonstrated that dry deposition metals loads to the Los Angeles Region far exceeded mass loadings of metals in storm flows between October 2003 and April 2004 (storm flow mass loadings of metals were 9-43% of the annual atmospheric deposition load). Sabin et al. (2005) found that atmospheric deposition in one small, urbanized catchment accounted for as much as 57-100% of the annual trace metals load in storm water. Thus, a substantial portion of the metals concentrations and loads in storm water from the SSFL may derive from atmospheric deposition unrelated to site activities.

- Estimated concentrations of dioxin in precipitation have been measured in excess of SSFL permit limits for storm flows, and estimated concentrations of mercury in precipitation have been measured at or near SSFL limits.

- Fires result in increased atmospheric deposition of metals and dioxins and cause significant hydrologic changes in watersheds, including higher runoff volumes, higher flow rates, and higher concentrations of total suspended solids ("TSS"), all of which carry regulated constituents. These results are significant given the 2005 Topanga Fire, which burned 70% of the SSFL site and devastated much of the site's vegetative cover and BMPs. Regional fires also contribute to increased atmospheric deposition of metals and other constituents in non-burned areas, thereby affecting the water quality of subsequent storm water runoff indirectly.

- Concentrations of regulated constituents in off-site soils are similar in magnitude and variability to those in soils on SSFL property. Calculations show that erosion of unimpacted soils will contribute concentrations of regulated constituents to storm flows, often at levels that could approach or exceed SSFL permit limits.

- Concentrations of metals in storm water runoff from the SSFL are similar to (and often lower than) concentrations in storm water runoff from other open space, natural areas. These concentrations are also similar (and often lower than) those detected in storm water runoff from certain major land use types (light industry, transportation, and commercial) and in the Los

Angeles River during storm events. Average concentrations of dioxin in storm water runoff from the SSFL are lower than average dioxin concentrations in wet weather samples collected in the Santa Monica Basin. They are also lower than the average dioxin concentrations in industrial process water discharges, storm water discharges, and in the Los Angeles River receiving water samples, as shown by NPDES discharge monitoring data gathered by the Regional Board.

The Regional Board should carefully consider these background constituent findings and their underlying data in evaluating the Basin Plan's water quality standards, particularly for Bell Creek, Dayton Canyon Creek, Arroyo Simi, Calleguas Creek, and the Los Angeles River. Water quality standards that require strict compliance with numeric limits for these and similar reaches should take into consideration background conditions so that they are feasible to achieve.

- Post Fire Vegetation Recovery Assessment Report – Phase 1 (March 2007) (Attachment 2) and Phase 2 (May 2007) (Attachment 3)

These reports were prepared by Geosyntec and were part of a comprehensive study of erosion control recovery at SSFL after the September 2005 Topanga Fire. The Fire burned 70% of the 2800-acre SSFL site and destroyed much of the site's vegetative cover, thereby increasing storm flows and erosion and making it more difficult for Boeing to comply with the limits in its NPDES permit. Phase 1 of the study, which was provided to the Regional Board on March 12, 2007, provided an initial semi-quantitative assessment of vegetative recovery based on literature review and reconnaissance-level survey of conditions at SSFL. Phase 2, which was provided to the Regional Board on May 21, 2007, quantitatively assessed the state of vegetation regrowth at the SSFL 18 months after the Fire in an attempt to estimate the amount of time required following fires for the vegetation to be considered to be recovered (in an erosion control context) relative to pre-fire conditions.

The Phase 1 Report concluded that vegetative recovery occurs most rapidly during the first six years of regrowth and less rapidly thereafter. Assuming normal weather patterns over the next 20-30 years, and in the absence of any catastrophic events on existing burned areas, burned chaparral at SSFL should follow the growth patterns described in literature for recovery of chaparral and coastal sage scrub communities. The Phase II Report concludes that vegetation at SSFL likely will recover within five to ten years following the Fire, or between 2010 and 2015. In the meantime, there will be increased erosion and storm water flows from the site.

These reports indicate that naturally occurring, unpredictable events, like the 2005 Topanga Fire, may have a significant impact on erosion, sediment transport, and

other factors that in turn make continuous compliance with NPDES permit limits infeasible. The Regional Board should amend the Basin Plan's beneficial uses and water quality objectives to allow for flexible goals and limits in the face of such events.

- Best Management Practices Effectiveness Sampling Workplan (May 2006) (Attachment 4) and R2-A Pond Filtration Pilot Test Report (October 2006) (Attachment 5)

  The BMPs Effectiveness report, prepared by MWH and previously submitted to the Regional Board on October 2, 2006, evaluates the effectiveness of existing structural BMPs at SSFL's storm water outfalls and establishes a pilot testing plan to examine the efficacy of possible future BMPs. Subsequent field work, described in the Pilot Test Report, also prepared by MWH and submitted to the Regional Board on October 24, 2006, implements the pilot plan by evaluating the constituent removal capabilities of eight different filtration media as part of a possible best management practices ("BMPs") approach to water quality management at SSFL. The report concludes that concentrations of various metals, including total copper, total iron, total lead and total manganese, were significantly reduced by various types of filtration media.

  The significance of these reports for the Regional Board's Triennial Review is twofold. First, the reports should provide the Regional Board with an understanding of the level of effort involved in attempting to find and implement methodologies to meet discharge standards on a continuous basis. Second, the reports show that while BMPs are highly effective in reducing the concentrations of regulated constituents in storm water discharges, there still will be exceedances of stringent numeric limits if governing water quality standards do not account for background conditions, seasonality, flow, and similar factors. Accordingly, numeric limits designed to achieve compliance with those standards may not be achievable under all conditions, and measures to ensure such compliance may yield only marginal improvements at disproportionate cost.

- Bioassessment Sampling and Analysis Plan for the Boeing Company, Santa Susana Field Laboratory (2008) (Attachment 6) and DFG SWAMP Bioassessment Procedure (2007) (Attachment 7)

  The 2008 Bioassessment Sampling and Analysis Plan was prepared by Aquatic Bioassay & Consulting Laboratories to satisfy the requirement in SSFL's NPDES permit that instream bioassessment sampling be conducted once per year at two sites on the SSFL property. The report assesses physical habitat conditions and integrity of the benthic macroinverterbrate community at each sampling site. The report indicates that there are no perennial streams at SSFL and that "only under the best rainfall conditions would any of [the creeks on the SSFL property] meet

the base criteria of four weeks of continuous flow" (page 3). Nonetheless, the report suggests two future sampling locations, one near a future groundwater extraction treatment system and one near Outfall 006.

The results of sampling at these sites will provide useful information about the presence or lack thereof of aquatic life in drainages on and near the SSFL property, which will be relevant to the Regional Board's assessment of beneficial uses and water quality standards for those drainages. We also are submitting a companion document entitled "Standard Operating Procedure for Bioassessments Sampling & Laboratory Analysis" (January 2008) (Attachment 8), which sets forth the procedures Aquatic Bioassay & Consulting Laboratories will use in sampling.

In order to assess the health of aquatic life and aquatic habitat in a stream, the California Department of Fish and Game ("DFG") uses the "SWAMP Bioassessment Procedure" (Attachment 6; also available at http://www.swrcb.ca.gov/swamp/docs/phab_sopr6.pdf). This protocol requires a "wadeable" stream for a bioassessment. Similarly, the Southern California Coastal Water Research Projected ("SCCWRP") requires for monitoring purposes that a stream be flowing for at least 4-6 weeks. See Southern California Coastal Water Research Project, Stormwater Monitoring Coalition Bioassessment Working Group, "Technical Report 539: Regional Monitoring of Southern California's Coastal Watersheds," at 5 (Dec. 2007) (Attachment 9). These procedures are consistent with the findings of the 2008 Bioassessment Sampling and Analysis Plan discussed above.

As the Regional Board is aware, certain designated beneficial uses are established to protect aquatic life and their habitat. Following the procedures identified above, any such uses must be for streams that are wadeable or free flowing for a period of at least 4-6 weeks. Yet many streams, including those on the SSFL property, are "ephemeral," a term the U.S. Army Corps of Engineers defines as a "stream [that] has flowing water only during and for a short duration after[] precipitation events in a typical year." See http://www.usace.army.mil/cw/cecwo/reg/2002nwps_def.pdf. Accordingly, there is insufficient evidence to designate these ephemeral streams with certain beneficial uses and to impose upon Boeing and other permittees limits designed to protect those uses.

In particular, we recommend that the Regional Board carefully consider the beneficial use designations of ephemeral reaches of streams between SSFL and the Los Angeles River, including Bell Creek, Dayton Canyon Creek, and other tributaries to the Los Angeles River, and between SSFL and Calleguas Creek, including tributaries to Calleguas Creek such as Arroyo Simi and Arroyo Las Posas. All of these reaches are currently designated WILD and/or WARM even though they have water flowing in them only after significant storm events. When flows are present, they typically last for a short period of time.

These reaches do not support aquatic invertebrate or fish habitat or waterfowl habitat dependent on aquatic invertebrates or fish. (Even in periods of unusual rainfall and high flow, these flows are highly variable and do not support aquatic habitat or life.). Indeed, in the second quarter of 2008 we attempted to perform the bioassessment sampling and habitat surveys called for in the 2008 Bioassessment Sampling Plan but could not because of inadequate flows. See SSFL Second Quarter 2008 Self-Monitoring Report (Attachment 10) at 2. To highlight these low and highly variable flow conditions, we have attached relevant stream flow data for Outfalls 1 and 2, which account for 60% of flow leaving SSFL, between October 2004 and February 2008. See Attachment 11. The Regional Board should recognize that low and variable flows are typical for the Region, and take these conditions into account when determining beneficial uses and water quality objectives.

Finally, lower reaches of these streams may currently support WILD and/or WARM beneficial uses. By employing a tiered aquatic life use ("TALU") structure, more suitable beneficial use designations can be applied to protect upper reaches of streams that are hydrologically connected to lower reaches that support fish and aquatic invertebrates.

- Cost of Compliance Data

Compliance costs generally

SSFL is composed of 2850 acres, of which approximately 1,325 acres are undeveloped (1,143 acres along the southern border and 182 along the northern border). The NPDES permit in effect requires that storm water from both the developed and undeveloped portions of SSFL be monitored, with enforceable effluent limitations in place on rainfall leaving the facility irrespective of its point of origin. These limits are based on both Basin Plan objectives and CTR values. The permit also requires an extensive monitoring program that includes chemical, radiological and toxicity testing at 15 outfalls.

Complying with these stringent numeric limits has required an extensive investigation, monitoring, construction and maintenance program. Elements of this program include installation of flow meters, construction of multimedia filtration beds, placement of straw waddles, hydromulching of barren terrain, and establishment and operation of an extensive monitoring and analyses program, including Level 4 validation audits of analytical data.

Costs for these compliance measures have totaled $30 million in the last five years:

2004: 1.5 million dollars
2005: 2.4 million dollars
2006: 8.7 million dollars

2007: 8.0 million dollars
2008: 9.6 million dollars

When calculated on a per-acre basis, Boeing has spent over $10,700 per acre in its attempts to achieve compliance with its NPDES permit. When limited to just those developed acres for which Boeing has been implementing the above measures, the expended cost is over $19,600 per acre. Please note that significant additional expenditures are planned for the remainder of 2008 and 2009.

Post-Topanga Fire compliance costs

Compliance costs following the 2005 Topanga Fire are exceptionally high. As noted, the Fire destroyed over 70% of SSFL's vegetation and most of the treatment system used to achieve compliance. The Fire resulted in the rebuilding of more elaborate treatment structures using multimedia filter beds supplemented by an extensive cleanup program. The cleanup program involved the removal of over 2,200 tons of ash, the placement of 7 miles of straw wattles, and aerial hydromulching over 800 acres. These efforts sought to ensure that ash and sediment would not enter the drainages and cause exceedances of applicable permit limits.

Compliance costs associated with this post-Fire effort have been highly variable due to the uniqueness of each watershed. The costs on a per watershed basis have ranged from a low of $72,000 to address rain run-off near an engine test stand that was not damaged by the Fire (less than .1 acres), to a high of $1,700,000 to address storm water runoff from a 539-acre watershed that experienced extensive fire damage.

- Toxicity Data

Over the course of the years SSFL has been required to monitor for numerous chemical and radiological constituents in the storm water discharged from SSFL. These data show that toxicity objectives have not been impacted even when numeric limits have not been met. See Attachment 12 (toxicity data); Attachment 13 (annual NPDES discharge monitoring reports; these and quarterly monitoring reports are available at http://www.boeing.com/aboutus/environment/santa_susana/ents/monitoring_reports.html). There have been only three exceptions to this record, and for each the reason was immediately identified as either operator error (for two exceptions in 2005 relating to on-site sewage treatment systems that have since been removed from service) or a mudslide (for an exception in 2007). See Attachment 13 (2005 and 2007 annual monitoring reports).

Thus, save for three inconsequential exceptions, the toxicity parameters in SSFL's discharges have been in compliance (thereby protecting water quality) even though SSFL has sometimes exceeded its effluent limits. We urge the Regional Board to consider this information in assessing the relationship between stringent numeric limits and water quality standards, as well as the reasonableness of stringent numeric limits themselves.

II. We encourage the Regional Board to provide meaningful opportunities for public involvement during the 2008 Triennial Review.

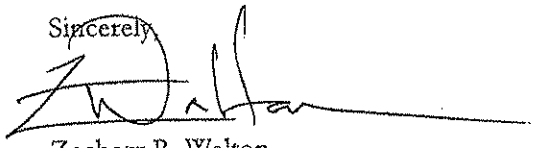
We understand that, during the 2004 Triennial Review process, the Regional Board held four public workshops and solicited public comments over a period of six months as part of an initial scoping process. The Regional Board's staff then prepared a prioritized list of candidate Basin Plan issues and a comprehensive report for which the Regional Board subsequently provided a 30-day public comment period and two public hearings. We urge the Regional Board to adopt the same or greater procedures for public involvement during the 2008 Triennial Review. Indeed, recent decisions in the Arcadia litigation, Cities of Arcadia v. State Water Resources Control Bd. (Super. Ct. Orange County, 2007, No. 06CCO2974), would seem to warrant more extensive consideration and public involvement because the Regional Board did not previously consider Water Code § 13241 factors in establishing water quality standards, particularly for storm water. At a minimum, we would expect that the Regional Board's public participation process will include more than the Board's September 25, 2008 information solicitation letter, such that all concerned parties have assurance that the Regional Board will properly evaluate the Section 13241 factors and Section 13242 implementation requirements as part of the 2008 Triennial Review.

In addition, we urge the Regional Board to adopt a sensible and transparent process for obtaining and handling the information it receives regarding the Triennial Review. That process should include focused and publicly noticed requests for data on particular topics, appropriate public hearings, and a timeline for moving forward with the Triennial Review and with particular candidate issues.

III. Conclusion

Thank you for the opportunity to provide the foregoing comments and information. We appreciate your time and look forward to working with you and your staff on this and other matters.

Sincerely,



Zachary R. Walton
of PAUL, HASTINGS, JANOFSKY & WALKER LLP

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ATTACHMENTS (on enclosed CDs)

1 Flow Science Incorporated, "Potential Background Constituent Levels in Storm Water at Boeing's Santa Susana Field Laboratory" (June 2007)

2 Geosyntec, "Post Fire Vegetation Recovery Assessment Report – Phase 1" (March 2007)

3 Geosyntec, "Post Fire Vegetation Recovery Assessment Report – Phase 2" (May 2007)

4 MWH, "Best Management Practices Effectiveness Sampling Workplan" (May 2006)

5 MWH, "R2-A Pond Filtration Pilot Test Report" (October 2006)

6 Aquatic Bioassay & Consulting Laboratories, "Bioassessment Sampling and Analysis Plan for the Boeing Company, Santa Susana Field Laboratory" (2008)

7 California Department of Fish & Game, "SWAMP Bioassessment Procedure" (2007)

8 Aquatic Bioassay & Consulting Laboratories, "Standard Operating Procedure for Bioassessments Sampling & Laboratory Analysis" (January 2008)

9 Southern California Coastal Water Research Project, Stormwater Monitoring Coalition Bioassessment Working Group, "Technical Report 539: Regional Monitoring of Southern California's Coastal Watersheds" (Dec. 2007)

10 SSFL Second Quarter 2008 Self-Monitoring Report

11 SSFL Stream Flow Data (October 2004-February 2008)

12 SSFL Toxicity Data (2000-2008)

13 SSFL Annual NPDES Discharge Monitoring Reports (2004-07)